

Appl. No. : 10/734,776  
Filed : December 12, 2003

### AMENDMENTS TO THE CLAIMS

1.-33 (Canceled)

34. (Currently Amended) A method of generating a monophonic output from a pair of input signals, the method comprising:

receiving left and right stereo inputs to an audio enhancement system;

phase adjusting the left input a first input to an audio enhancement system to produce left phase adjusted first information;

enhancing the left input with a first perspective filter to produce left enhanced information, the first perspective filter operative to enhance spatial characteristics of the left input;

enhancing the right a second input to the audio enhancement system with a second perspective filter to produce right enhanced second information, the second perspective filter operative to enhance spatial characteristics of the right input;

phase adjusting the right input to produce right phase adjusted information;

inverting the right enhanced second information to produce inverted right enhanced information; and

combining at least a portion of the left phase adjusted first information, at least a portion of the right phase adjusted information, at least a portion of the left enhanced information, and with at least a portion of the inverted right enhanced second information to generate an enhanced monophonic output, wherein phase adjusting the first left and right inputs preserves audio information such that signal cancellation is avoided during said combining.

35. (Canceled)

36. (Currently Amended) The method of Claim ~~34~~<sup>35</sup> wherein the act of enhancing the left first input and the act of enhancing the right second input comprises adjusting an amplitude of the left first input and adjusting an amplitude of the right second input.

37. (Currently Amended) The method of Claim ~~34~~<sup>35</sup> wherein the act of enhancing the left first input and the act of enhancing the right second input comprises

adjusting an amplitude of the left ~~first~~ input and adjusting the amplitude and phase of the right ~~second~~ input.

38. (Currently Amended) The method of Claim 37 wherein adjusting the phase of the left and right inputs modifies a frequency response at frequencies where the frequency responses of an audio enhancement system have approximately equal amplitudes and opposite phases so as to preserve audio information at the frequencies.

39. (Previously Presented) The method of Claim 34 further comprising reproducing audio from the enhanced monophonic output through a speaker wherein the acts of enhancing are dependent on speaker characteristics of the speaker.

40. (Currently Amended) The method of Claim ~~34~~<sup>35</sup> wherein the acts of enhancing the left ~~first~~ input and the right ~~second~~ input comprise filtering and adjusting the gain of the left ~~first~~ input and the right ~~second~~ input.

41. (Currently Amended) The method of Claim 34 wherein the acts of phase adjusting to produce left and right phase adjusted ~~first~~ information, enhancing to produce left and right enhanced ~~second~~ information, inverting the right enhanced ~~second~~ information, and combining to generate the enhanced monophonic output are performed by a digital signal processor.

42. (Withdrawn) The method of Claim 34 further comprising synthetically generating the first and second inputs.

43. (Withdrawn) The method of Claim 42 wherein the act of synthetically generating the first and second inputs comprises providing a monophonic input as the first input and delaying the monophonic input to produce the second input.

44. (Currently Amended) An audio enhancement apparatus to produce a single output signal from a pair of input signals, the apparatus comprising:

a left ~~first~~ phase adjuster operatively coupled to a left ~~first~~ input to an audio enhancement system to produce left phase adjusted ~~first~~ information;

a left enhancer that enhances the left input to produce left enhanced information, the left enhancer comprising a first perspective filter operative to enhance spatial characteristics of the left input;

a right ~~first~~ enhancer operatively coupled to a right ~~second~~ input to an audio enhancement system to produce right enhanced ~~second~~ information, the

right enhancer comprising a second perspective filter operative to enhance spatial characteristics of the right input;

a right phase adjuster that adjusts the phase of the right input to produce right phase adjusted information;

an inverter to invert the right enhanced ~~second~~ information to produce right inverted enhanced information; and

a mixer that combines at least a portion of the left phase adjusted first information, at least a portion of the right phase adjusted information, at least a portion of the left enhanced information, and ~~with~~ at least a portion of the inverted right enhanced ~~second~~ information to generate an enhanced monophonic output, wherein the left and right first phase adjusters preserves audio information ~~such that signal cancellation is avoided~~ during said combining by the mixer.

45. (Canceled)

46. (Currently Amended) The apparatus of Claim ~~44~~45 wherein the left first enhancer comprises a first gain control device and the right ~~second~~ enhancer comprises a second gain control device.

47. (Currently Amended) The apparatus of Claim ~~44~~45 wherein the left first enhancer comprises a first gain control device and the right ~~second~~ enhancer comprises a second phase adjuster and a second gain control device.

48. (Currently Amended) The apparatus of Claim 47 wherein the left and right phase adjusters modify ~~modifies~~ a frequency response at frequencies where the frequency responses of the audio enhancement apparatus have approximately equal amplitudes and opposite phases so as to preserve audio information at the frequencies.

49. (Currently Amended) The apparatus of Claim 44 further comprising a speaker wherein parameters of the left first and right ~~second~~ enhancers are dependent on speaker characteristics of the speaker.

50. (Currently Amended) The apparatus of Claim ~~44~~45 wherein the left first enhancer comprises a first filter and a first gain control device and the right ~~second~~ enhancer comprises a second filter and a second gain control device.

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51. (Currently Amended) The apparatus of Claim 44 further comprising a digital signal processor wherein the digital signal processor implements the left first phase adjuster, the left first enhancer, and the mixer.

52. (Withdrawn) The apparatus of Claim 44 further comprising a monophonic input and a stereo synthesizer wherein the stereo synthesizer synthesizes the first input and the second input from the monophonic input.

53. (Withdrawn) The apparatus of Claim 52 wherein the stereo synthesizer comprises a delay.